

Work Order ID 151006

Monday, September 12, 2016 9:01:15 AM

151006

Page 1

Item ID: 646.9701 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Cutter Sub Assembly
 Start Date: 9/15/2016 Start Qty: 3.00 ***3*** Cust Item ID:
 Required Date: 9/20/2016 Req'd Qty: 3.00 ***3*** Customer:
 Reference:

Approvals: Process Plan: DAS 21 9-89 Date: SEP 13 2016 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
646.9700	REV D2

110	Pick Kit	0.00				3			
110									
Packaging	Memo	0.00							
Packaging									

120		0.00							
120									
Small Fab	Memo	0.12							
Small Fab	Assemble as per dwg and apply loctite 598 on all faying surfaces per note .								
	A/R RTV LOCTITE 598: <u>135479</u>								
	exp. date: <u>04/18</u>								

130	QC5- Inspect part completeness to step on W/O	0.00							
130									
QC	Memo	0.01							
Quality Control									

OCT 25 2016 3 16/11/01 3x 3 NOV 01 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Description Work Order Deviation				Disposition			Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																		
Root Cause		FAULT CATEGORY																							
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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Identify as per dwg & Stock Location: <u>CC107</u>	0.00							
140									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER IAW MPP-120***								
150	QC21- Final Inspection - Work Order Release	0.00							
150									
QC	Memo	0.05							
Quality Control									

US 10/11/1



3 DAS 6 9-89 NOV 01 2016

DAS 21 9-89 NOV 01 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:12.5%;">Skid-tube ☐</td> <td style="width:12.5%;">Cross tube ☐</td> <td style="width:12.5%;">Water Jet ☐</td> <td style="width:12.5%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
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Monday, September 12, 2016 9:01:14 AM

Page 1

151006

646 9701

Required Date: 9/20/2016

Required Qty: 3.00

IPP REV

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
646.9710		Manufactured	No				Each	17.0000		3			
646 9710 Body													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				cck012				17					
				142487				15		3			
				145351				2					
646.9711		Manufactured	No			110	Each	50.0000	2	6			
646 9711 Blade													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				CCK106				50		6			
				147263				50					
MS27039-08-19		Purchased	No			110	Each	470.0000	6	18			
MS27039-08-19 Screw													
				<u>Location</u>				<u>Loc Qty</u>		<u>Loc Code</u>			
				GA				1					
				m135046				1					
				ST277				469					
				m135408				69					
				m135536				100					
				m135566				300		18			

DQA: _____ Date: _____



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Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
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OTHER : ☐					

Picklist Print

Page 2

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Work Order ID: 151006

151006

Parent Item: 646.9701

646 9701

Parent Item Name: Cutter Sub Assembly

Start Date: 9/15/2016

Required Date: 9/20/2016

Start Qty: 3.00

Required Qty: 3.00

NAS1149FN832P

Purchased

No

110

Each

3,153.000

12

36

NAS1149FN832P

Washer

DAS

6

9-20

OCT 25 2016

Location

Loc Qty

Loc Code

GA

1553

M133316

16

M133769

89

M135058

1448

ST263

1600

M135603

1600

36

MS21042L08

Purchased

No

110

Each

856.0000

6

18

MS21042L08

Nut

DAS

6

9-20

OCT 25 2016

Location

Loc Qty

Loc Code

GA

155

m134063

55

m135274

100

ST303

701

m135408

125

m135466

176

m135536

200

m135566

200

18

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Shop Packet Print

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		OTHER : ☐ _____							



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

ENGINEERING CHANGE NOTICE NO.

05360

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED BY J. BECKER

DATE: 03/24/16

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY: ENGR *[Signature]*

MFG *[Signature]*

QC *[Signature]*

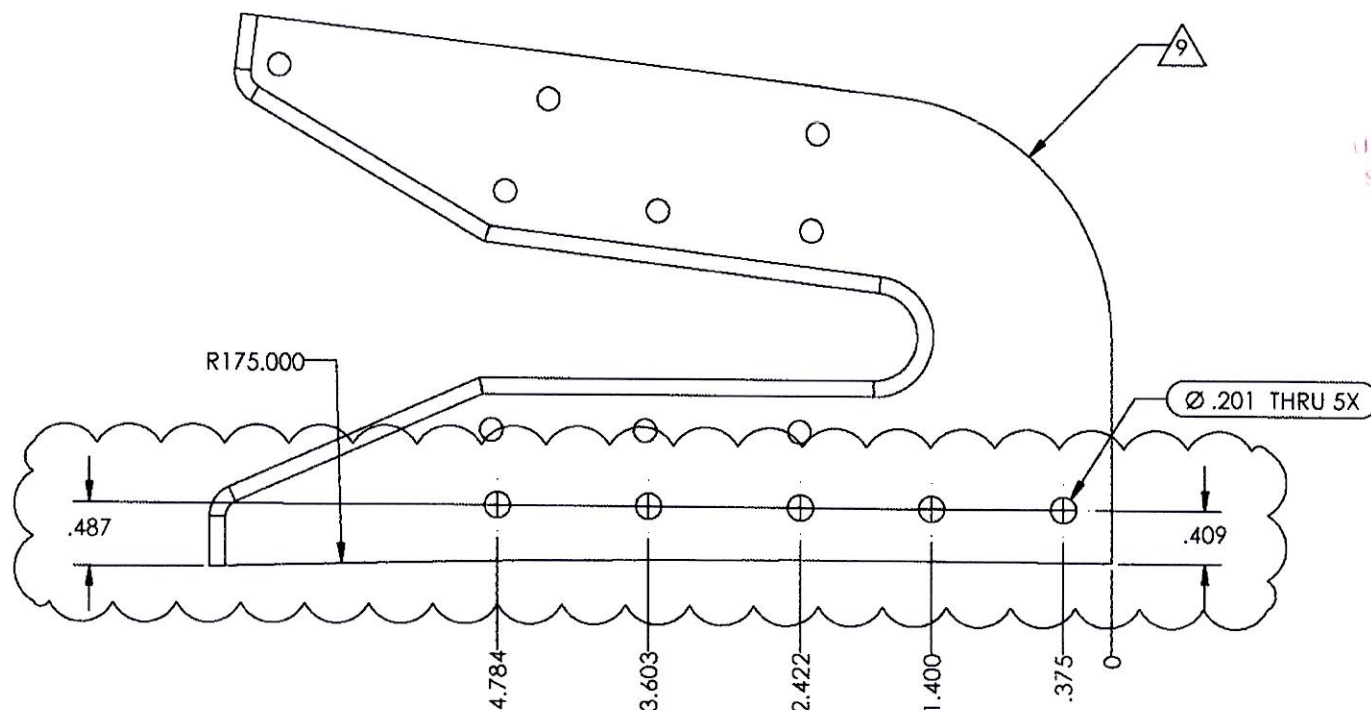
EFF. CURRENT ORDER

REASON: REVISED DIMENSIONS

ECR: N/A

ACTION ITEM:
1.

SHEET 7, ZONE C3 IS:



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151006 MJS
1609-13

DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

☐ YES ☒ NO



APICAL INDUSTRIES, INC.
dba DART AEROSPACE

ENGINEERING CHANGE NOTICE NO.

05345

SHEET 1 OF 1

DWG NO. 646.9700

REV: D

PREPARED
BY

J. GARDINER

DATE: 03/15/16

EFFECT ON DWG

☐ INC. ☒ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY:

ENGR.

MFG

QC

EFF.

CURRENT ORDER

TRANSACTION CODES (TC):

A-ADD
R-REVISE

C-CREATE
D-DELETE

REASON: REVISED NOTES

ECR:

N/A

ACTION ITEM:

1.

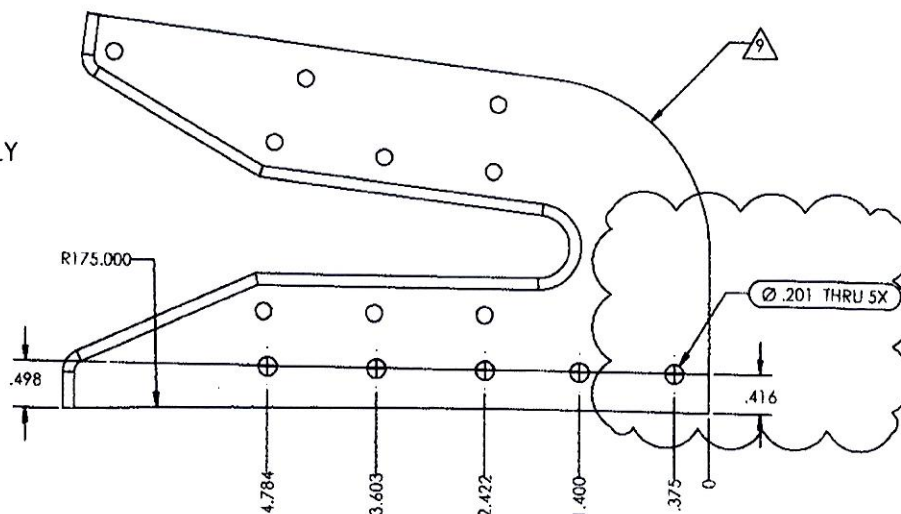
SHEET 1, ZONE A6 IS:

NOTES:

IS

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 2.1, 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3; 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.

SHEET 7, ZONE C5 IS:



DOCUMENTS EFFECTED:

☐ PATTERN ☐ MDL ☐ INSTALL INSTRUCTIONS ☐ ICA ☐ FMS ☐ BOM

CHANGE CATEGORY

☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED

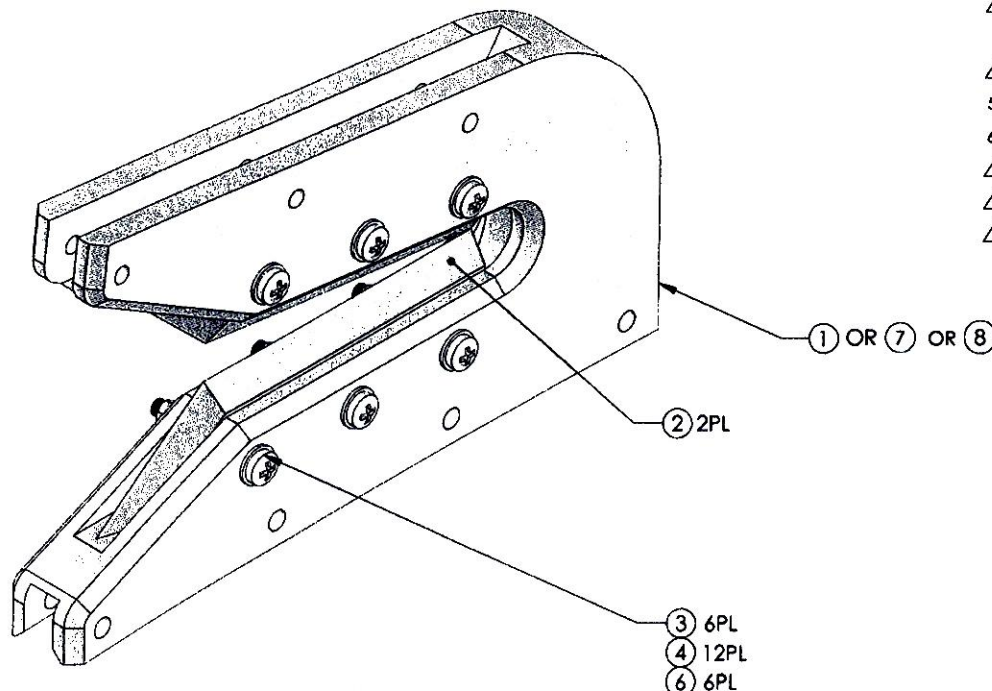
☐ YES ☒ NO

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REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
	LAST PROTOTYPE REVISION - P02		HC
HC	INITIAL RELEASE	03/29/09	P. BRAVO
A	INCORPORATED ECH 03744, 03808, 03912	04/06/13	P. BRAVO
B	INCORPORATED ECH 03947	07/03/13	P. BRAVO
C	INCORPORATED ECH 04039	08/09/13	P. BRAVO
D	INCORPORATED ECH 04329	02/26/14	P. BRAVO

NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH IAW MPP-172 SECTION 3.3 & 4.3.
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MPP-172 SECTION 3.3: 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.



UNINCORPORATED ECN(S)

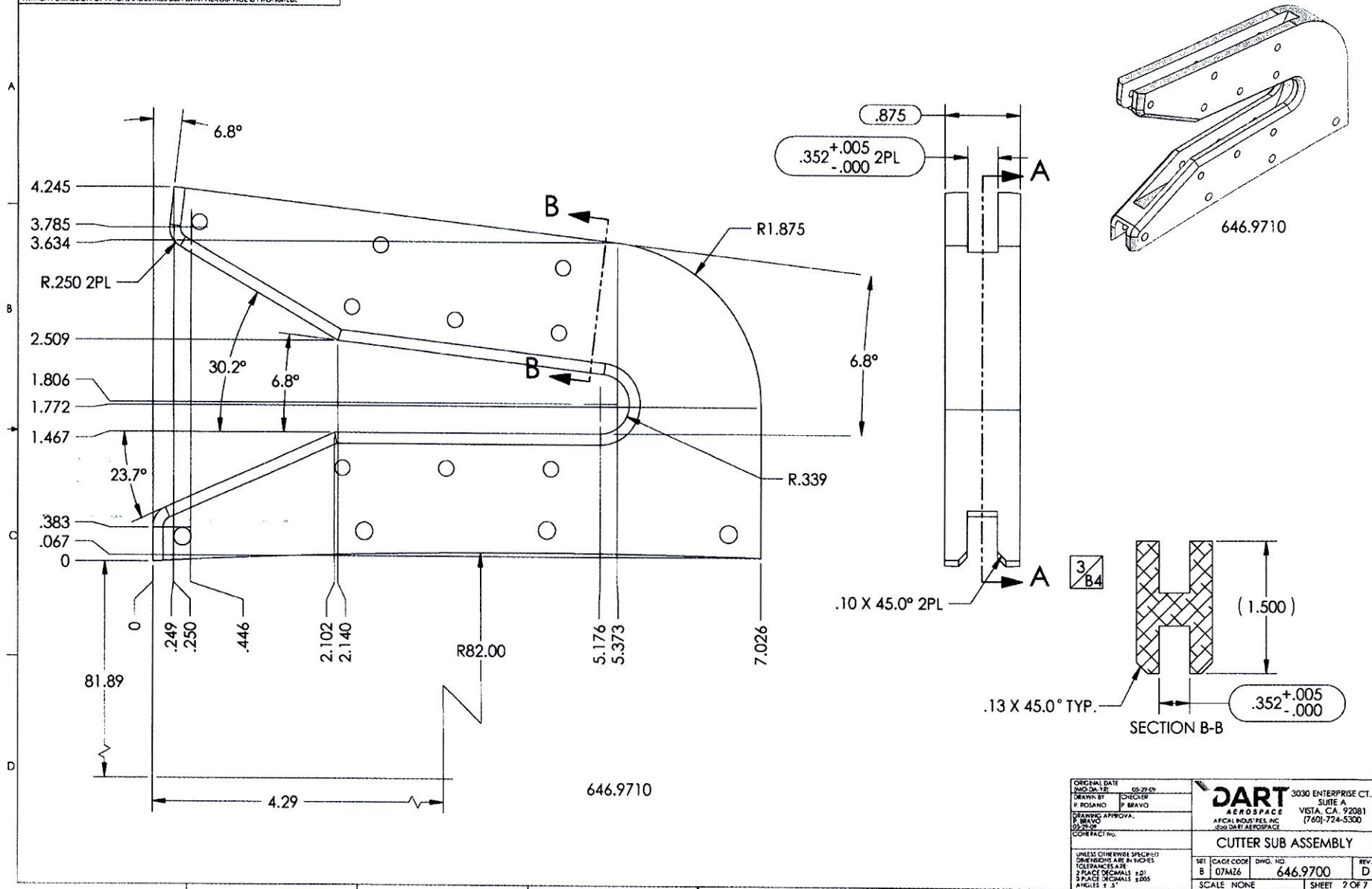
05345, 05360,

1			8	646.9713	BODY			
	1		7	646.9712	BODY			
6	6	6	6	601.1541	LOCKNUT	MS21042L08		
A/R	A/R	A/R	5	601.2045	RTV, LOCTITE 598			
12	12	12	4	601.2764	WASHER	MS21042L08		
6	6	6	3	601.2765	SCREW	MS27039-0819		
2	2	2	2	646.9711	BLADE			
			1	646.9710	BODY			
X				646.9703	CUTTER SUB ASSY			
	X			646.9702	CUTTER SUB ASSY			
		X		646.9701	CUTTER SUB ASSY			
9702	9702	9701	FIND #	PART #	DESCRIPTION	MAT'L	SPEC.	
QTY								
PARTS LIST								
NEXT ASSY (S)					ORIGINAL DATE 03-29-09			
646.9600					DRAWN BY CHIEFER			
					P. BRAVO			
					DESIGNED BY P. BRAVO			
					CHECKED BY P. BRAVO			
					CONTRACT NO.			
					UNLESS OTHERWISE SPECIFIED			
					DIMENSIONS ARE IN INCHES			
					TOLERANCES ARE:			
					1 PLACE DECIMALS ±.01			
					3 PLACE DECIMALS ±.005			
					ANGLES ±.5°			
					SERI CAGI CODE DWG. NO.			
					B 07M16 646.9700			
					SCALE NONE SHEET 1 OF 7			

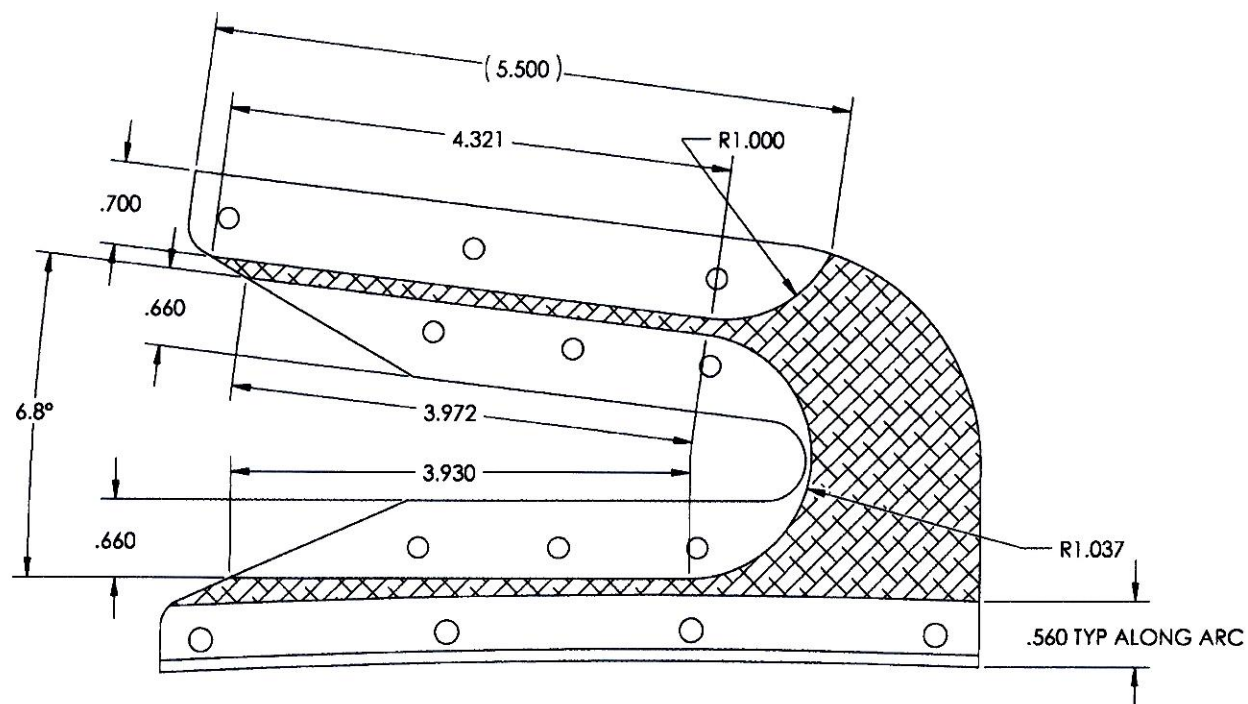
DART 3030 ENTERPRISE CT., SUITE A
AEROSPACE VISTA, CA. 92081
APICAL INDUSTRIES INC. (760)-724-5300
DBA DART AEROSPACE

CUTTER SUB ASSEMBLY

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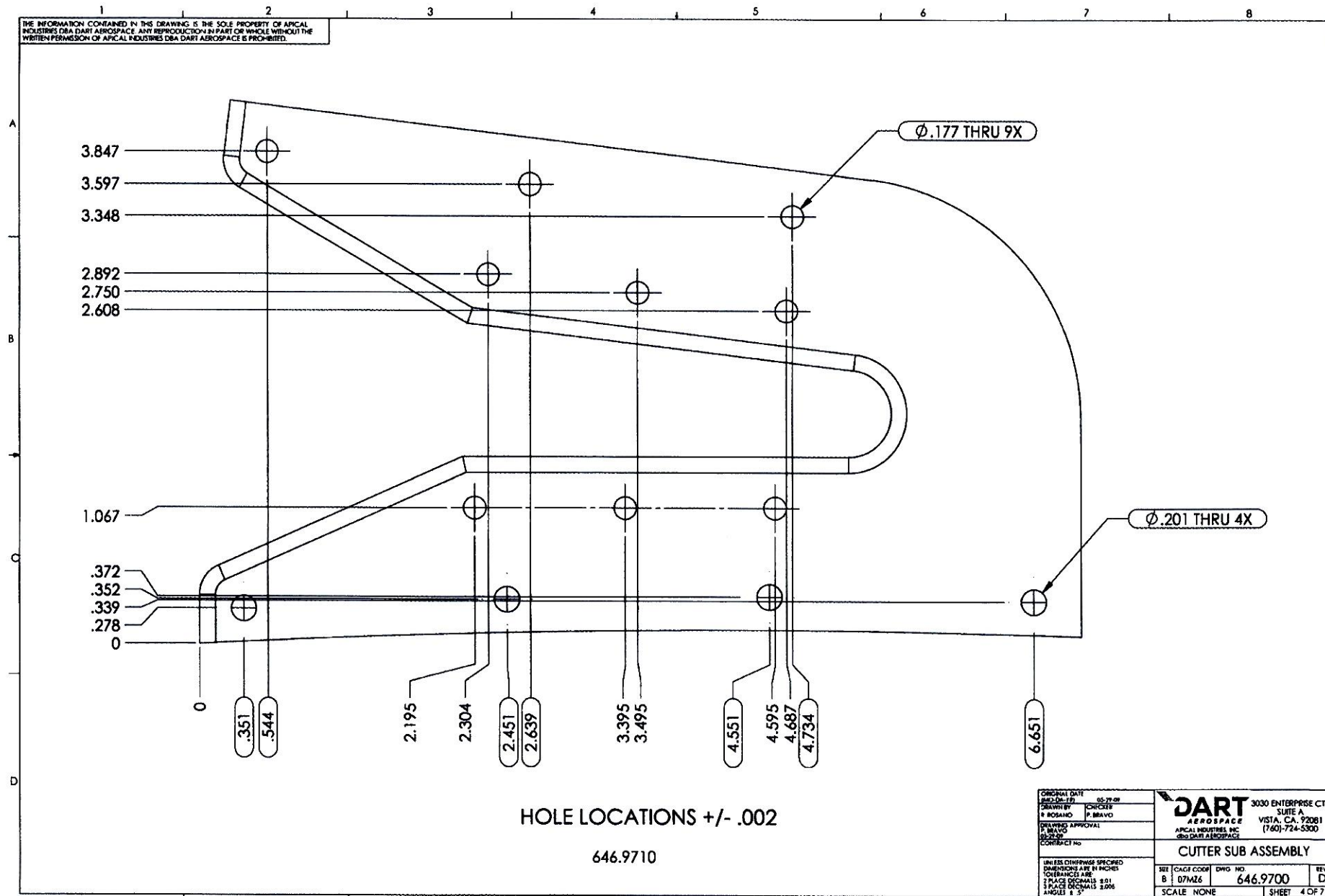


SECTION A-A 

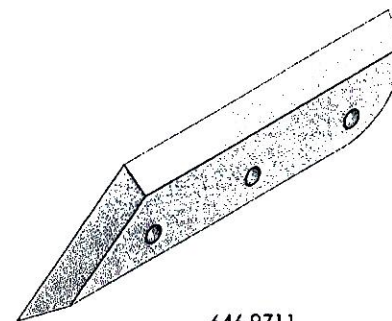
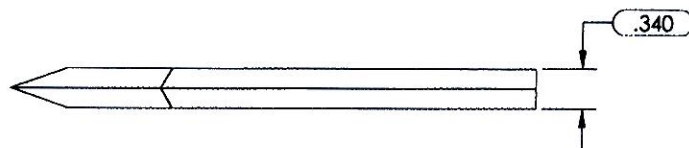
646.9710

ORIGINAL DATE 06/29/08		3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760)-724-5300	
DRAWN BY E. ROSANO	CHECKED P. BRAVO	DART AEROSPACE APICAL INDUSTRIES INC. DBA DART AEROSPACE	
DRAWING APPROVAL DATE CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ± .01 ANGLES ± .1°		REV B	QWS. NO. 07M26
SCALE NONE		646.9700 D	
		SHEET 3 OF 7	

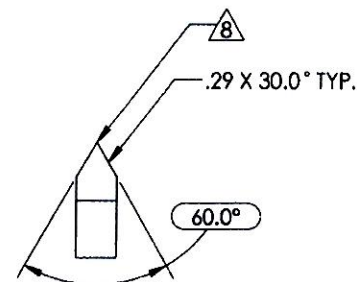
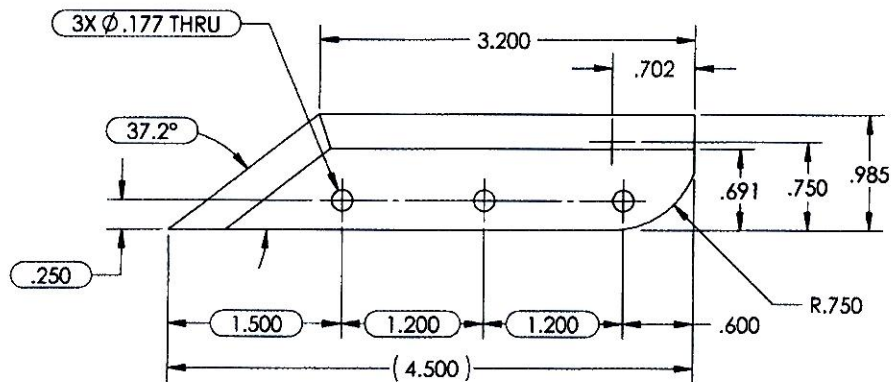
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.



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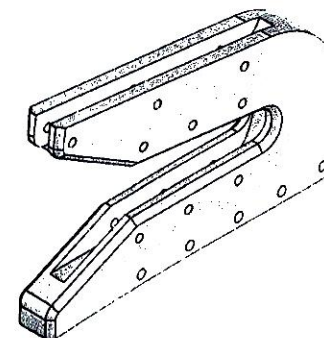
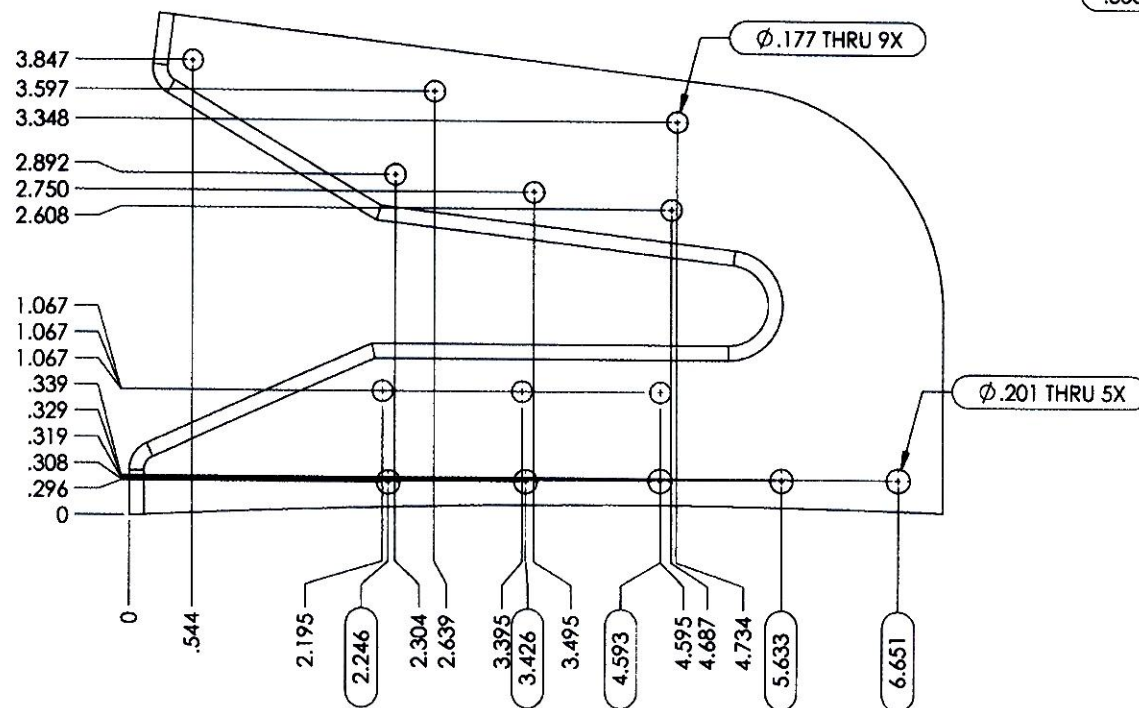
646.9711



646.9711

ORIGINAL DATE 1980-04-10	CO-75 OR CUTTER	DART AEROSPACE 3030 ENTERPRISE CT., VISTA, CA. 92081 (760) 724-5300 APICAL INDUSTRIES INC. DBA DART AEROSPACE
DRAWN BY R. ROSANO	P. BRAYO	
DESIGNED BY P. BRAYO		
CONTRACT NO. 100-22-00		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		107 CAGE CODE B D7M26 DWD NO. 646.9700 REV. D SCALE NONE SHEET 5 OF 7

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES DBA DART AEROSPACE. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES DBA DART AEROSPACE IS PROHIBITED.

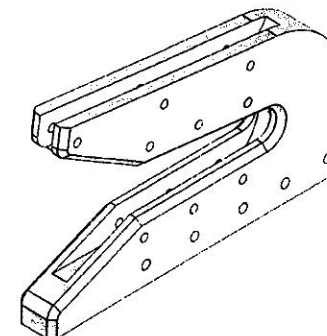


646.9712 9

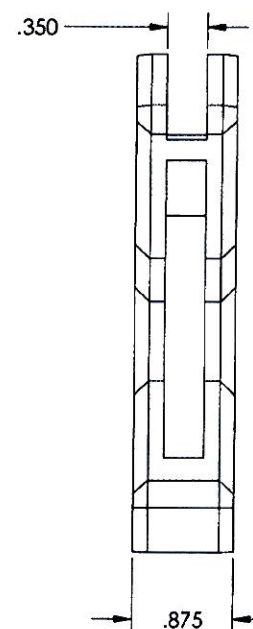
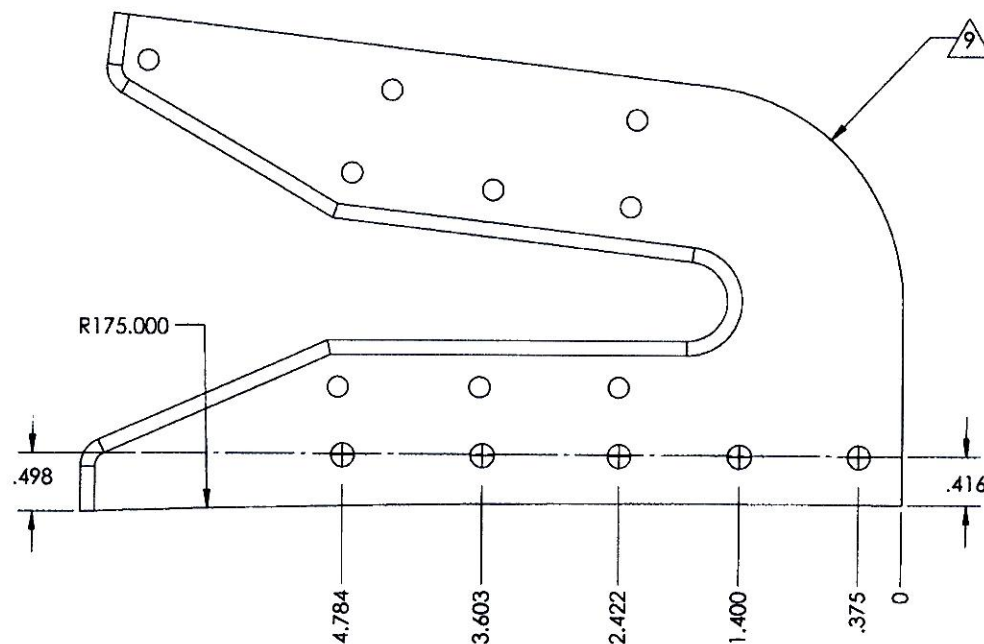
646.9712

ORIGINAL DATE: 05-21-01		DART AEROSPACE		3030 ENTERPRISE CT., SUITE A, VISTA, CA 92081 (760)-724-5300	
DRAWN BY: R. ROSANO		CHECKED: P. BRAYO			
DRAWING APPROVAL: G. BAYO					
CONTRACT NO:					
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE: 1 PLACE DECIMALS .001, 2 PLACE DECIMALS .0005, ANGLES .5°.					
SHEET: 8	CAGE CODE: 079426	DWG. NO.: 646.9700	REV: D	SCALE: NONE	
			SHEET: 6 OF 7		

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646.9713



ORIGINAL DATE 03-27-09
 DRAWN BY J. ROSSANO
 CHECKED P. BRAYO
 DRAWING APPROVAL P. BRAYO
 CONTRACT NO.

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 3 PLACE DECIMALS ±.01
 ANGLES ±.5°

DART 3030 ENTERPRISE CT., SUITE A
 AEROSPACE VISTA, CA. 92081
 APICAL INDUSTRIES INC. (760)-724-5300
 DBA DART AEROSPACE

CUTTER SUB ASSEMBLY

SHEET	CAGE CODE	DWG. NO.	REV.
B	07M26	646.9700	D
SCALE: NONE		SHEET 7 OF 7	